WHAT IS CLAIMED IS:

1.   A gamma correction method comprising:

a first conversion step of converting image data using a first table storing conversion values in addresses corresponding to at least input values: u(k) represented by u(k) = a b^{-k} (where a and b are constants and k is 0, 1, 2, ...m) of all input values and linear interpolation;

a second table storing step of storing in memory a second table storing conversion values set in response to the image data provided at said first conversion step in addresses corresponding to at least input values: v(k) represented by v(k) = ck+d (where c and d constants and k is 0, 1, 2, ...n) of all input values; and

a second conversion step of converting the image data provided at said first conversion step using the second table and linear interpolation.

2.   A gamma correction unit comprising:

a memory storing a first table storing conversion values in addresses corresponding to at least input values: u(k) represented by u(k) = a b^{-k} (where a and b are constants and k is 0, 1, 2, ...m) of all input values and linear interpolation;

first conversion means for converting image data using the first table and linear interpolation;

second table storing means for storing in the memory a

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second table storing conversion values set in response to the image data provided by said first conversion means for at least input values: $v(k)$ represented by $v(k) = ck+d$ (where c and d are constants and k is 0, 1, 2, ...q) of all input values; and

5   second conversion means for converting the image data provided by said first conversion means using the second table and linear interpolation.

3.   An image read system comprising a scanning section for
10 scanning   an   optical   image   and   outputting   image   data representing the optical image, an optical system for inputting an optical image of an original to the scanning section, and a gamma correction unit as claimed in claim 2, characterized by:

15   setting means for causing the scanning section to output low-resolution image data, causing the first conversion means to convert the low-resolution image data output by the scanning section, and setting a conversion value in the second table in response to the low-resolution image data provided by the
20 first conversion means; and

conversion means for causing the scanning section to output high-resolution image data and causing the first conversion means and the second conversion means to convert the high-resolution image data output by the scanning section.

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